

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
26 May 2005 (26.05.2005)

PCT

(10) International Publication Number
WO 2005/047746 A2

(51) International Patent Classification⁷: **F16L**
(21) International Application Number:
PCT/US2004/037740
(22) International Filing Date:
12 November 2004 (12.11.2004)
(25) Filing Language: English
(26) Publication Language: English
(30) Priority Data:
60/519,400 12 November 2003 (12.11.2003) US

(71) Applicants and
(72) Inventors: **BURCHILL, G. Stuart, Jr.** [US/US]; 1998
Morning Sun Lane, Naples, FL 34119 (US). **WACHTEL,**
Peter [US/US]; 521 Lehigh Avenue, Union, NJ 07083
(US).
(74) Agent: **MCLELAND, Le-Nhung**; Mcleland & Asso-
ciates, P.L.L.C., 9679-C Main Street, Fairfax, VA 22031
(US).

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *without international search report and to be republished upon receipt of that report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: COMPOSITION FOR THERMAL INSULATING LAYER

(57) Abstract: A curable coating composition for forming a thermal insulating layer, the composition comprising: (a) highly porous particles of a material obtained by drying a wet sol-gel, the particles having a porosity of at least 80% and a particle size in the range from 5 μ m to 4.0 mm; and (b) a film forming resin system comprising a film forming polymer, wherein the particles (a) are dispersed in the resin system (b), and the resin system (b) contains at least one stabilizer having an average molecular weight in the range from about 1,000 to about 4,000, said stabilizer being at least one member selected from the group consisting of ethylene oxide-propylene oxide block copolymers, poly C₂ - C₃ alkoxyated C₁₂ - C₁₈ saturated or unsaturated fatty alcohols, poly C₂ - C₃ alkoxyated hydrogenated or partially hydrogenated castor oils, poly C₂ - C₃ alkoxyated hydrogenated or partially hydrogenated soybean oils, polydimethyl siloxane C₂- C₃ alkoxyates, and sorbitan esters of C₁₂ - C₁₈ saturated or unsaturated fatty acids, the amount of the particles (a) is in the range from 2 to 6% by weight, based on the weight of the composition, and the amount of the stabilizer is in the range from about 50 % to about 90% by weight, based on the weight of the highly porous particles. The composition has high storage stability and forms a coating having excellent insulation value.



WO 2005/047746 A2